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 NEWS  7  DEC 21  IPC search and display fields enhanced in CA/CAplus with the
                  IPC reform
 NEWS  8  DEC 23  New IPC8 SEARCH, DISPLAY, and SELECT fields in USPATFULL/
                  USPAT2
 NEWS  9  JAN 13  IPC 8 searching in IFIPAT, IFIUDB, and IFICDB
 NEWS 10  JAN 13  New IPC 8 SEARCH, DISPLAY, and SELECT enhancements added to
                  INPADOC
 NEWS 11  JAN 17  Pre-1988 INPI data added to MARPAT
 NEWS 12  JAN 17  IPC 8 in the WPI family of databases including WPIFV
 NEWS 13  JAN 30  Saved answer limit increased
 NEWS 14  JAN 31  Monthly current-awareness alert (SDI) frequency
                  added to TULSA

 NEWS EXPRESS  JANUARY 03 CURRENT VERSION FOR WINDOWS IS V8.01,
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=> fil medline biosis caplus embase wpids
COST IN U.S. DOLLARS                              SINCE FILE      TOTAL
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                                                 ENTRY     SESSION
FULL ESTIMATED COST                               0.21        0.21

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=> ribosome (w) inactivating (w) protein
L1         3699 RIBOSOME (W) INACTIVATING (W) PROTEIN

=> review and l1
L2          171 REVIEW AND L1

=> heteromeric and l2
L3            0 HETEROMERIC AND L2

=> t ti l2 1-50

L2   ANSWER 1 OF 171     MEDLINE on STN
TI   Recent advances in trichosanthin, a ribosome-
     inactivating protein with multiple pharmacological
     properties.

L2   ANSWER 2 OF 171     MEDLINE on STN
TI   Ricin: the endoplasmic reticulum connection.

L2   ANSWER 3 OF 171     MEDLINE on STN
TI   Cinnamomin--a versatile type II ribosome-inactivating
     protein.

L2   ANSWER 4 OF 171     MEDLINE on STN
TI   Ribosome-inactivating proteins: entry into mammalian cells and
     intracellular routing.

L2   ANSWER 5 OF 171     MEDLINE on STN
TI   Cinnamomin: a multifunctional type II ribosome-
     inactivating protein.

L2   ANSWER 6 OF 171     MEDLINE on STN
TI   Mistletoe extracts standardised in terms of mistletoe lectins (ML I) in
     oncology: current state of clinical research.

L2   ANSWER 7 OF 171     MEDLINE on STN
TI   Mistletoe extracts standardized to mistletoe lectins in oncology:
     review on current status of preclinical research.

L2   ANSWER 8 OF 171     MEDLINE on STN
TI   Ribosome-inactivating proteins from plants: more than RNA N-glycosidases?.

L2   ANSWER 9 OF 171     MEDLINE on STN
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TI   Mistletoe (viscum album) lectins as cytokine inducers and immunoadjuvant in tumor therapy. A **review**.

L2   ANSWER 10 OF 171   MEDLINE on STN
TI   Pokeweed antiviral protein: ribosome inactivation and therapeutic applications.

L2   ANSWER 11 OF 171   MEDLINE on STN
TI   Mitotoxins: growth factor-targeted cytotoxic molecules.

L2   ANSWER 12 OF 171   MEDLINE on STN
TI   Are lectins of Viscum album interesting tools in lung diseases? A **review** of recent results.

L2   ANSWER 13 OF 171   BIOSIS   COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI   Recent advances in trichosanthin, a **ribosome-inactivating protein** with multiple pharmacological properties.

L2   ANSWER 14 OF 171   BIOSIS   COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI   Immunotoxins and other conjugates: Preparation and general characteristics.

L2   ANSWER 15 OF 171   BIOSIS   COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI   Ribosome-inactivating proteins: Entry into mammalian cells and intracellular routing.

L2   ANSWER 16 OF 171   BIOSIS   COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI   Ribosorne inactivating proteins and apoptosis.

L2   ANSWER 17 OF 171   BIOSIS   COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI   Ricin: the endoplasmic reticulum connection.

L2   ANSWER 18 OF 171   BIOSIS   COPYRIGHT (c) 2006 The Thomson Corporation on STN
TI   Cinnamomin: A multifunctional type II **ribosome-inactivating protein.**

L2   ANSWER 19 OF 171   CAPLUS   COPYRIGHT 2006 ACS on STN
TI   Ribosome-inactivating proteins in bitter gourd (Momordica charantia)

L2   ANSWER 20 OF 171   CAPLUS   COPYRIGHT 2006 ACS on STN
TI   Ribosome-inactivating proteins

L2   ANSWER 21 OF 171   CAPLUS   COPYRIGHT 2006 ACS on STN
TI   Recent advances in trichosanthin, a **ribosome-inactivating protein** with multiple pharmacological properties

L2   ANSWER 22 OF 171   CAPLUS   COPYRIGHT 2006 ACS on STN
TI   Ribosome inactivating proteins and apoptosis

L2   ANSWER 23 OF 171   CAPLUS   COPYRIGHT 2006 ACS on STN
TI   Plant protein toxins: structure, function, and biotechnological applications

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TI Cinnamomin - a versatile type II **ribosome-inactivating protein**

L2 ANSWER 25 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Ricin: the endoplasmic reticulum connection

L2 ANSWER 26 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Ribosome-inactivating proteins

L2 ANSWER 27 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Nigrin b: A **ribosome-inactivating protein** from elder. Pharmaceutical use in the construction of inmmunotoxins and conjugates for cancer therapy

L2 ANSWER 28 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Immunotoxins and other conjugates: Pre-clinical studies

L2 ANSWER 29 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Antiviral activity of Ribosome Inactivating Proteins in medicine

L2 ANSWER 30 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Cytotoxicity and toxicity to animals and humans of Ribosome-Inactivating Proteins

L2 ANSWER 31 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Ribosome-inactivating proteins: Entry into mammalian cells and intracellular routing

L2 ANSWER 32 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI The genetics and properties of cereal Ribosome-Inactivating Proteins

L2 ANSWER 33 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Genetics of Ribosome-Inactivating Proteins

L2 ANSWER 34 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI The structure of ribosome inactivating proteins

L2 ANSWER 35 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Description, distribution, activity and phylogenetic relationship of ribosome-inactivating proteins in plants, fungi and bacteria

L2 ANSWER 36 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Antifungal proteins: targets, mechanisms and prospective applications

L2 ANSWER 37 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Non-toxic type 2 ribosome-inactivating proteins (RIPs) from Sambucus: Occurrence, cellular and molecular activities and potential uses. [Erratum to document cited in CA139:361566]

L2 ANSWER 38 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Death receptor activation complexes. It takes two to activate TNF receptor 1

L2 ANSWER 39 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Applications of plant antiviral proteins

L2 ANSWER 40 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI The "Fuzzy Logic" of the Death-Inducing Signaling Complex in Lymphocytes

L2 ANSWER 41 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Non-toxic type 2 ribosome-inactivating proteins (RIPs) from Sambucus: Occurrence, cellular and molecular activities and potential uses

L2 ANSWER 42 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Recent development of antitumor agents from chinese herbal medicines. Part II. High molecular compounds

L2 ANSWER 43 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Cinnamomin: a multifunctional type II **ribosome-inactivating protein**

L2 ANSWER 44 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Application of ribosome-inactivating proteins of Chinese herbs in biomedicine

L2 ANSWER 45 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Ribosome-inactivating proteins and its application in plant antifungal gene engineering

L2 ANSWER 46 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Proteolytic cleavage of molecules involved in cell death or survival pathways: A role in the control of apoptosis?

L2 ANSWER 47 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Highly efficient cell-free protein synthesis system prepared from wheat embryos

L2 ANSWER 48 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI Liposomes containing plant ribosome-inactivating proteins

L2 ANSWER 49 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI New information on signal transduction research in NF-κB activation

L2 ANSWER 50 OF 171 CAPLUS COPYRIGHT 2006 ACS on STN
TI **Review** of protein and polypeptide of Momordica charantia

=> d ibib abs l2 4

L2 ANSWER 4 OF 171 MEDLINE on STN

ACCESSION NUMBER:	2004281546 MEDLINE
DOCUMENT NUMBER:	PubMed ID: 15180507
TITLE:	Ribosome-inactivating proteins: entry into mammalian cells and intracellular routing.
AUTHOR:	Roberts Lynne M; Lord J Michael
CORPORATE SOURCE:	Department of Biological Sciences, University of Warwick, Coventry, CV4 7AL, UK.. lynne-roberts@warwick.ac.uk
SOURCE:	Mini reviews in medicinal chemistry, (2004 Jun) 4 (5) 505-12. Ref: 97 Journal code: 101094212. ISSN: 1389-5575.
PUB. COUNTRY:	Netherlands
DOCUMENT TYPE:	Journal; Article; (JOURNAL ARTICLE) General Review; (REVIEW) (REVIEW, TUTORIAL)
LANGUAGE:	English
FILE SEGMENT:	Priority Journals
ENTRY MONTH:	200411
ENTRY DATE:	Entered STN: 20040608 Last Updated on STN: 20041117 Entered Medline: 20041116

AB To catalytically-modify ribosomes in vivo, ribosome-inactivating proteins produced by plants must enter susceptible mammalian cells in order to reach their substrates in the cytosol. This **review** primarily focuses on the biosynthesis, mechanism of cell entry and intracellular

trafficking of ricin, the most thoroughly studied **ribosome-inactivating protein** in this respect.

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=> ribosome (w) inactivating (w) protein
             0 RIBOSOME
             0 INACTIVATING
             5 PROTEIN
L4           0 RIBOSOME (W) INACTIVATING (W) PROTEIN

=> fil medline biosis caplus embase wpids
COST IN U.S. DOLLARS                              SINCE FILE     TOTAL
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FULL ESTIMATED COST                                     0.24     28.37

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     FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:32:17 ON 13
     FEB 2006
L1         3699 RIBOSOME (W) INACTIVATING (W) PROTEIN
L2          171 REVIEW AND L1
L3            0 HETEROMERIC AND L2

     FILE 'STNGUIDE' ENTERED AT 17:34:52 ON 13 FEB 2006
L4            0 RIBOSOME (W) INACTIVATING (W) PROTEIN

     FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:37:10 ON 13
     FEB 2006

=> subunit and l2
L5           7 SUBUNIT AND L2
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=> Shiga and l2
L6            5 SHIGA AND L2

=> l5 and l6
L7            1 L5 AND L6

=> d ibib abs l7

L7   ANSWER 1 OF 1  EMBASE  COPYRIGHT (c) 2006 Elsevier B.V. All rights
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ACCESSION NUMBER:     2004368358  EMBASE
TITLE:                Cytotoxic ribosome-inactivating lectins from plants.
AUTHOR: .             Hartley M.R.; Lord J.M.
CORPORATE SOURCE:     M.R. Hartley, Department of Biological Sciences, University
                      of Warwick, Gibbet Hill Rd., W. Midlands CV4 7AL, Coventry,
                      United Kingdom. mhartley@bio.warwick.ac.uk
SOURCE:               Biochimica et Biophysica Acta - Proteins and Proteomics, (1
                      Sep 2004) Vol. 1701, No. 1-2, pp. 1-14. .
                      Refs: 136
                      ISSN: 1570-9639  CODEN: BBAPBW
PUBLISHER IDENT.:     S 1570-9639(04)00166-9
COUNTRY:              Netherlands
DOCUMENT TYPE:        Journal; General Review
FILE SEGMENT:         030     Pharmacology
                      037     Drug Literature Index
LANGUAGE:             English
SUMMARY LANGUAGE:     English
ENTRY DATE:           Entered STN: 20040916
                      Last Updated on STN: 20040916
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AB   A class of heterodimeric plant proteins consisting of a carbohydrate-binding B-chain and an enzymatic A-chain which act on ribosomes to inhibit protein synthesis are amongst the most toxic substances known. The best known example of such a toxic lectin is ricin, produced by the seeds of the castor oil plant, Ricinnus communis. For ricin to reach its substrate in the cytosol, it must be endocytosed, transported through the endomembrane system to reach the compartment from which it is translocated into the cytosol, and there avoid degradation making it possible for a few molecules to inactivate a large proportion of the ribosomes and hence kill the cell. Cell entry by ricin involves the following steps: (i) binding to cell-surface glycolipids and glycoproteins bearing β-1,4-linked galactose residues through the lectin activity of the B-chain (RTB); (ii) uptake by endocytosis and entry into early endosomes; (iii) transfer by vesicular transport to the trans-Golgi network; (iv) retrograde vesicular transport through the Golgi complex and into the endoplasmic reticulum (ER); (v) reduction of the disulfide bond connecting the A- and B-chains; (vi) a partial unfolding of the A-chain (RTA) to enable it to translocate across the ER membrane via the Sec61p translocon using the pathway normally followed by misfolded ER proteins for targeting to the ER-associated degradation (ERAD) machinery; (vi) refolding in the cytosol into a protease-resistant, enzymatically active structure; (vii) interaction with the sarcin-ricin domain (SRD) of the large ribosome **subunit** RNA followed by cleavage of a single N-glycosidic bond in the RNA to generate a depurinated, inactive ribosome. In addition to the highly specific action on ribosomes, ricin and related ribosome-inactivating proteins (RIPs) have a less specific action in vitro on DNA and RNA substrates releasing multiple adenine, and in some instances, guanine residues. This polynucleotide:adenosine glycosidase activity has been implicated in the general antiviral, and specifically, the anti HIV-1 activity of several single-chain RIPs which are homologous to the A-chains of the heterodimeric lectins. However, in the absence of clear cause and effect evidence in vivo, such claims should be regarded

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                                                             ENTRY    SESSION
FULL ESTIMATED COST                                           0.30      43.06

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L2          171 REVIEW AND L1
L3            0 HETEROMERIC AND L2

     FILE 'STNGUIDE' ENTERED AT 17:34:52 ON 13 FEB 2006
L4            0 RIBOSOME (W) INACTIVATING (W) PROTEIN

     FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:37:10 ON 13
     FEB 2006
L5            7 SUBUNIT AND L2
L6            5 SHIGA AND L2
L7            1 L5 AND L6

     FILE 'STNGUIDE' ENTERED AT 17:38:37 ON 13 FEB 2006

     FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:41:26 ON 13
     FEB 2006

=> l5 or l6
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L8          11 L5 OR L6

=> l8 not l7
L9          10 L8 NOT L7

=> t ti l9 1-10

L9   ANSWER 1 OF 10  CAPLUS  COPYRIGHT 2006 ACS on STN
TI   Molecular mechanism of action of ribotoxins

L9   ANSWER 2 OF 10  CAPLUS  COPYRIGHT 2006 ACS on STN
TI   Ribosome inactivating protein and its
     application in plant anti-fungal disease genetic engineering

L9   ANSWER 3 OF 10  CAPLUS  COPYRIGHT 2006 ACS on STN
TI   The enemy within: ricin and plant cells

L9   ANSWER 4 OF 10  CAPLUS  COPYRIGHT 2006 ACS on STN
TI   Jasmonates - secondary messengers in plant defense and stress reactions

L9   ANSWER 5 OF 10  CAPLUS  COPYRIGHT 2006 ACS on STN
TI   Enzymic properties of ribosome-inactivating proteins (RIPs) and related
     toxins

L9   ANSWER 6 OF 10  CAPLUS  COPYRIGHT 2006 ACS on STN
TI   Ribosome-inactivating protein from plant

L9   ANSWER 7 OF 10  EMBASE  COPYRIGHT (c) 2006 Elsevier B.V. All rights
     reserved on STN
TI   Bacterial toxins: Potential weapons against HIV infection.

L9   ANSWER 8 OF 10  EMBASE  COPYRIGHT (c) 2006 Elsevier B.V. All rights
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TI   Delivery into cells: Lessons learned from plant and bacterial toxins.

L9   ANSWER 9 OF 10  EMBASE  COPYRIGHT (c) 2006 Elsevier B.V. All rights
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TI   Ribosome inactivating proteins and apoptosis.

L9   ANSWER 10 OF 10  EMBASE  COPYRIGHT (c) 2006 Elsevier B.V. All rights
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TI   Cytotoxicity and toxicity to animals and humans of ribosome-inactivating
     proteins.


=> d ibib abs l9 1-10

L9   ANSWER 1 OF 10  CAPLUS  COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:         2001:214249  CAPLUS
DOCUMENT NUMBER:          134:204786
TITLE:                    Molecular mechanism of action of ribotoxins
AUTHOR(S):                Sawasaki, Tatsuya; Endo, Yaeta
CORPORATE SOURCE:         Fac. Eng., Ehime Univ., Japan
SOURCE:                   Tanpakushitsu Kakusan Koso (2001), 46(4,
                          3gatsuzokang), 355-362
                          CODEN: TAKKAJ; ISSN: 0039-9450
PUBLISHER:                Kyoritsu Shuppan
DOCUMENT TYPE:            Journal; General Review
LANGUAGE:                 Japanese
AB   A review with 23 refs., on mol. mechanism of ribosome
     inactivation by ribotoxins including α-sarcin and ricins, discussing
     α-sarcin as a RNase that specifically cleavages toxic domains of 28S
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rRNA, modification of 28S rRNA by A chain of ricin and of other related toxins, such as **Shiga** toxin and verotoxin, as a RNA N-glycosidase, and structure and function of toxic domains of rRNA.

L9 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:189511 CAPLUS
DOCUMENT NUMBER: 135:43456
TITLE: **Ribosome inactivating protein** and its application in plant anti-fungal disease genetic engineering
AUTHOR(S): Shan, Li-bo; Xu, Jian
CORPORATE SOURCE: Institute of Genetics, Chinese Academy of Sciences, Beijing, 100101, Peop. Rep. China
SOURCE: Shengwu Gongcheng Jinzhan (2000), 20(6), 74-78
CODEN: SGJHA2; ISSN: 1003-3505
PUBLISHER: Zhongguo Kexueyuan Wenxian Qingbao Zhongxin
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Chinese

AB A **review** with 52 refs. Fungal disease is one of main reasons on crop losses. At the same time, there are a lot of proteins inhibiting the fungal growth in vitro from plants, to which **ribosome inactivating protein** (RIP) belongs. It can specifically cleave the glycosidic bond of adenine from the rRNA of the large **subunit** and cause complete inaction of the ribosome, hence inhibiting protein synthesis. But it can not inactivate "self" ribosomes, and only shows varying degrees of activity towards ribosomes of distantly related species, including fungal ribosomes, which indicates that it is a defensive agent whose principal function is probably antipathogens. By genetic engineering it can be effectively expressed in some economical crops and such engineered plants may be desirably antidisease, which is becoming a new way to protecting the plant against fungal disease because it avoids not only potentially harming to the environment causing by the application of agrochems. but also the time-consuming processes of conventional breeding. In the present study, we briefly and comprehensively elaborated its distribution, classification, biochem., structural, functional properties, effects on protein synthesis and its perspectives closely focusing on its roles in resistance to fungal disease.

L9 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:588860 CAPLUS
DOCUMENT NUMBER: 129:257645
TITLE: The enemy within: ricin and plant cells
AUTHOR(S): Frigerio, Lorenzo; Roberts, Lynne M.
CORPORATE SOURCE: Istituto Biosintesi Vegetali, Consiglio Nazionale delle Ricerche, Milan, 20133, Italy
SOURCE: Journal of Experimental Botany (1998), 49(326), 1473-1480
CODEN: JEBOA6; ISSN: 0022-0957
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A **review** with 67 refs. Ricin, a **ribosome-inactivating protein** from the seeds of the castor oil plant (Ricinus communis L.) is one of the most potent cell poisons known. It is able to bind and enter most mammalian cells where it exploits their fully reversible secretory pathway to reach the endoplasmic reticulum. Ricin is then able to exit the endoplasmic reticulum to access the cytosol where it inhibits protein synthesis, thus killing the cells. Castor bean ribosomes are sensitive to ricin, but the plant has developed strategies to protect its own cells from suicide. The intracellular routing of ricin has been traditionally studied by exogenously adding toxin to mammalian

cells and by following its path through the cell. However, the extreme potency of this protein has prevented the final membrane transport step from being studied in detail. Now, the expression of ricin in heterologous plant cells is proving helpful in elucidating details of both toxin biosynthesis and vacuolar targeting, and in studying membrane translocation of the catalytic **subunit** from the endoplasmic reticulum to the cytosol.

REFERENCE COUNT: 67 THERE ARE 67 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:336782 CAPLUS

DOCUMENT NUMBER: 127:15395

TITLE: Jasmonates - secondary messengers in plant defense and stress reactions

AUTHOR(S): Reinbothe, Christiane; Reinbothe, Steffen

CORPORATE SOURCE: Institute of Plant Biochemistry, Halle/Saale, D-06120, Germany

SOURCE: Physical Stresses in Plants: Genes and Their Products for Tolerance, Proceedings of the Workshop on Genes and Their Products for Tolerance to Physical Stresses in Plants, Maratea, Italy, Sept. 24-27, 1995 (1996), Meeting Date 1995, 249-259. Editor(s): Grillo, Stefania; Leone, Antonella. Springer: Berlin, Germany.
CODEN: 64JRAU

DOCUMENT TYPE: Conference; General Review

LANGUAGE: English

AB A **review** and discussion with 46 refs. Jasmonates influence plant gene expression in a pleiotropic manner. Whether released in plants upon pathogen attack and stress treatment or applied externally, jasmonates induce numerous plant defense and stress proteins (JIPs) and simultaneously lower or even shut down the expression of photosynthetic genes, including those for the small **subunit** of ribulose-1,5-bisphosphate carboxylase/oxygenase (the rbcS gene product) and a light-harvesting chlorophyll a/b binding protein (the lhb gene product). The jip genes are rapidly transcriptionally activated, and the resulting jip transcripts are preferentially translated, as compared to rbcS and lhb mRNAs. However, rbcS and lhb transcripts are preserved in the nonpolysomal fraction in the early stage of the jasmonate response, presumably to potentially allow recovery of the cell from stress treatment or pathogen attack. Within the plastid compartment, early changes in transcript functionality, as discussed for rbcL, the mRNA encoding the large **subunit** of RuBisCo, appear to be superimposed on delayed jasmonate effects on plastid transcription and RNA stabilities. Amino acids released from the degradation of chloroplast proteins are used for cytoplasmic JIP formation. In the final stage of the jasmonate response, protein biosynthesis is irreversibly inactivated. The underlying mol. mechanism requires the induction of JIP60, which is a novel **ribosome-inactivating protein** and the specific marking of the plant ribosome. The coordinate interplay between JIP60 and its intracellular target, marked ribosomes, finally leads to localized cell death and thus may prevent the spread of bacteria, viruses and fungi beyond the site of infection.

L9 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1992:422162 CAPLUS

DOCUMENT NUMBER: 117:22162

TITLE: Enzymic properties of ribosome-inactivating proteins (RIPs) and related toxins

AUTHOR(S): Fong, W. P.; Wong, Ricky N. S.; Go, Thomas T. M.; Yeung, H. W.

CORPORATE SOURCE: Chin. Med. Mater. Res. Cent., Chin. Univ. Hong Kong, Shatin, Hong Kong
SOURCE: Life Sciences (1991), 49(25), 1859-69
CODEN: LIFSAK; ISSN: 0024-3205
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A **review** with 90 refs. Ribosome-inactivating proteins (RIPs) are a group of proteins that inhibit protein synthesis in eukaryotic cells. While the biol. effects have been well characterized, the underlying enzymic mechanisms have not been elucidated until recently. Two different mechanisms have been identified. Plant and bacterial RIPs act as N-glycosidases. They cleave a single N-glycosidic bond between adenine and ribose at a specific nucleotide A-4324 of the 28 S rRNA of the 60 S ribosomal.**subunit.** On the other hand, the fungal RIPs act as RNases and cleave a single phosphodiester bond between G-4325 and A-4326 of the same rRNA, just one nucleotide away from the site of actin of plant/bacterial RIPs. Other protein synthesis inhibitory proteins act by their ADP-ribosyltransferase activity which modify and thus inactivate elongation factor-2. Recently, some toxins have been shown to possess DNase activity which may also account for their toxicity.

L9 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:633039 CAPLUS
DOCUMENT NUMBER: 107:233039
TITLE: **Ribosome-inactivating protein** from plant
AUTHOR(S): Funatsu, Gunki
CORPORATE SOURCE: Fac. Agric., Kyushu Univ., Fukuoka, 812, Japan
SOURCE: Kagaku to Seibutsu (1987), 25(10), 624-5
CODEN: KASEAA; ISSN: 0453-073X
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese

AB A **review,** with 8 refs., on **ribosome-inactivating protein** isolated from plants, including the action against the 60 S **subunit** of the ribosome and inhibition of virus proliferation.

L9 ANSWER 7 OF 10 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN
ACCESSION NUMBER: 2005338288 EMBASE
TITLE: Bacterial toxins: Potential weapons against HIV infection.
AUTHOR: Alfano M.; Rizzi C.; Corti D.; Adduce L.; Poli G.
CORPORATE SOURCE: M. Alfano, DIBIT, Via Olgettina 58, 20132 Milano, Italy. massimo.alfano@hsr.it
SOURCE: Current Pharmaceutical Design, (2005) Vol. 11, No. 22, pp. 2909-2926. .
Refs: 302
ISSN: 1381-6128 CODEN: CPDEFP
COUNTRY: Netherlands
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT:
004 Microbiology
026 Immunology, Serology and Transplantation
030 Pharmacology
037 Drug Literature Index
038 Adverse Reactions Titles
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 20050818
Last Updated on STN: 20050818

AB Natural toxins are the product of a long-term evolution, and have captured crucial events in the most essential and vital processes of living organisms. They can attack components of the protein synthesis machinery

(as in the case of Diphteria and **Shiga** toxins, and Ribosome inactivating proteins), actin polymerization (Clostridium botulinum type C, C2, toxins and Enterotoxin A), signal transduction pathways (Cholera toxin, Heat-labile enterotoxins, Pertussis and Adenylate cyclase toxins), intracellular trafficking of vesicules (for Tetanus and Botulinum neurotoxin type C) as well as immune and/or inflammatory responses (Pyrogenic exotoxins, Cholera and Pertussis toxins). Of interest is the fact that several bacterial and vegetal toxins can either kill selectively cells infected with the human immunodeficiency virus (HIV) or exert inhibitory effects on its life cycle. In particular both pertussis toxin (PTX) and its nontoxic B-oligomeric component (PTX-B) can block the infectious process in vitro at multiple levels, by preventing the entry of CCR5-dependent (R5) HIV strains and by inhibiting both R5 and CXCR4-dependent HIVs at post-entry level(s). In addition, some toxins. possess immunostimulating properties that have been exploited in terms of adjuvancy and induction of specific cytotoxic T lymphocytes responses to different vaccine preparations, including some experimental vaccine against HIV infection. Thus, toxins may represent a relatively unexplored exhibition of powerful biological agents that could either prevent infection or attack HIV-infected cells. .COPYRGT. 2005 Bentham Science Publishers Ltd.

L9 ANSWER 8 OF 10 EMBASE

ACCESSION NUMBER:	2005276287 EMBASE
TITLE:	Delivery into cells: Lessons learned from plant and bacterial toxins.
AUTHOR:	Sandvig K.; van Deurs B.
CORPORATE SOURCE:	Prof. K. Sandvig, Institute for Cancer Research, The Norwegian Radium Hospital, University of Oslo, Montebello 0310 Oslo, Norway
SOURCE:	Gene Therapy, (2005) Vol. 12, No. 11, pp. 865-872. . Refs: 85 ISSN: 0969-7128 CODEN: GETHEC
COUNTRY:	United Kingdom
DOCUMENT TYPE:	Journal; General Review
FILE SEGMENT:	022 Human Genetics 029 Clinical Biochemistry 052 Toxicology
LANGUAGE:	English
SUMMARY LANGUAGE:	English
ENTRY DATE:	Entered STN: 20050707 Last Updated on STN: 20050707

AB A number of protein toxins of bacterial and plant origin have cytosolic targets, and knowledge about these toxins have provided us with essential information about mechanisms that can be used to gain access to the cytosol as well as detailed knowledge about endocytosis and intracellular sorting. Such toxins include those that have two moieties, one (the B-moiety) that binds to cell surface receptors and another (the A-moiety) with enzymatic activity that enters the cytosol, as well as molecules that only have the enzymatically active moiety and therefore are inefficient in cell entry. The toxins discussed in the present article include bacterial toxins such as **Shiga** toxin and diphtheria toxin, as well as plant toxins such as ricin and ribosome-inactivating proteins without a binding moiety, such as gelonin. Toxins with a binding moiety can be used as vectors to translocate epitopes, intact proteins, and even nucleotides into the cytosol. The toxins fall into two main groups when it comes to cytosolic entry. Some toxins enter from endosomes in response to low endosomal pH, whereas others, including **Shiga** toxin and ricin, are transported all the way to the Golgi apparatus and the ER before they are translocated to the cytosol. Plant proteins such as gelonin that are without a binding moiety are taken up only by fluid-phase endocytosis, and

normally they have a low toxicity. However, they can be used to test for disruption of endosomal membranes leading to cytosolic access of internalized molecules. Similarly to toxins with a binding moiety they are highly toxic when reaching the cytosol, thereby providing the investigator with an efficient tool to study endosomal disruption and induced transport to the cytosol. In conclusion, the protein toxins are useful tools to study transport and cytosolic translocation, and they can be used as vectors for transport to the interior of the cell.

L9 ANSWER 9 OF 10 EMBASE

ACCESSION NUMBER: 2005096086 EMBASE
TITLE: Ribosome inactivating proteins and apoptosis.
AUTHOR: Narayanan S.; Surendranath K.; Bora N.; Surolia A.; Karande A.A.
CORPORATE SOURCE: A.A. Karande, Department of Biochemistry, Indian Institute of Science, Bangalore 560012, India. anjali@biochem.iisc.ernet.in
SOURCE: FEBS Letters, (28 Feb 2005) Vol. 579, No. 6, pp. 1324-1331.
.
Refs: 47
ISSN: 0014-5793 CODEN: FEBLAL
COUNTRY: Netherlands
DOCUMENT TYPE: Journal; (Short Survey)
FILE SEGMENT: 030 Pharmacology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 20050317
Last Updated on STN: 20050317

AB Ribosome inactivating proteins (RIPs) are protein toxins that are of plant or microbial origin that inhibit protein synthesis by inactivating ribosomes. Recent studies suggest that RIPs are also capable of inducing cell death by apoptosis. Though many reports are available on cell death induced by RIPs, the mechanism involved is not well studied. Comparison of pathways of apoptosis and cellular events induced by various RIPs suggests a central role played by mitochondria, probably acting as an integrator of cellular stress and cell death. The purpose of this **review** is to compare the various apoptotic pathways that may be involved and propose a general pathway in RIP-induced cell death.

L9 ANSWER 10 OF 10 EMBASE

ACCESSION NUMBER: 2004277127 EMBASE
TITLE: Cytotoxicity and toxicity to animals and humans of ribosome-inactivating proteins.
AUTHOR: Battelli M.G.
CORPORATE SOURCE: M.G. Battelli, Dipto. di Patologia Sperimentale, Alma Mater Studiorum, University of Bologna, Via San Giacomo 14, I-40126 Bologna, Italy. mgbatt@alma.unibo.it
SOURCE: Mini-Reviews in Medicinal Chemistry, (2004) Vol. 4, No. 5, pp. 513-521. .
Refs: 154
ISSN: 1389-5575 CODEN: MMCIAE
COUNTRY: Netherlands
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 005 General Pathology and Pathological Anatomy
029 Clinical Biochemistry
030 Pharmacology

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                        037     Drug Literature Index
                        038     Adverse Reactions Titles
                        052     Toxicology
LANGUAGE:               English
SUMMARY LANGUAGE:       English
ENTRY DATE:             Entered STN: 20040715
                        Last Updated on STN: 20040715
AB   The toxicity to cells and animals of type 1 and toxic and non-toxic type 2
     Ribosome-Inactivating Proteins (RIP) is discussed in correlation with
     their catalytic activity, resulting in ribosome inactivation and
     apoptosis.  The symptoms and histopathological lesions induced by RIP to
     animals and humans is also reviewed. .COPYRGT. 2004 Bentham Science
     Publishers Ltd.


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     (FILE 'HOME' ENTERED AT 17:31:30 ON 13 FEB 2006)

     FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:32:17 ON 13
     FEB 2006
L1          3699 RIBOSOME (W) INACTIVATING (W) PROTEIN
L2           171 REVIEW AND L1
L3             0 HETEROMERIC AND L2

     FILE 'STNGUIDE' ENTERED AT 17:34:52 ON 13 FEB 2006
L4             0 RIBOSOME (W) INACTIVATING (W) PROTEIN

     FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:37:10 ON 13
     FEB 2006
L5             7 SUBUNIT AND L2
L6             5 SHIGA AND L2
L7             1 L5 AND L6

     FILE 'STNGUIDE' ENTERED AT 17:38:37 ON 13 FEB 2006

     FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE, WPIDS' ENTERED AT 17:41:26 ON 13
     FEB 2006
L8            11 L5 OR L6
L9            10 L8 NOT L7

=> t ti l5 1-7

L5   ANSWER 1 OF 7  CAPLUS  COPYRIGHT 2006 ACS on STN
TI   Ribosome inactivating protein and its
     application in plant anti-fungal disease genetic engineering

L5   ANSWER 2 OF 7  CAPLUS  COPYRIGHT 2006 ACS on STN
TI   The enemy within: ricin and plant cells

L5   ANSWER 3 OF 7  CAPLUS  COPYRIGHT 2006 ACS on STN
TI   Jasmonates - secondary messengers in plant defense and stress reactions

L5   ANSWER 4 OF 7  CAPLUS  COPYRIGHT 2006 ACS on STN
TI   Enzymic properties of ribosome-inactivating proteins (RIPs) and related
     toxins

L5   ANSWER 5 OF 7  CAPLUS  COPYRIGHT 2006 ACS on STN
TI   Ribosome-inactivating protein from plant

L5   ANSWER 6 OF 7  EMBASE  COPYRIGHT (c) 2006 Elsevier B.V. All rights
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TI   Cytotoxic ribosome-inactivating lectins from plants.

L5   ANSWER 7 OF 7  EMBASE  COPYRIGHT (c) 2006 Elsevier B.V. All rights
     reserved on STN
TI   Cytotoxicity and toxicity to animals and humans of ribosome-inactivating
     proteins.


=> t ti l6 1-5

L6   ANSWER 1 OF 5  CAPLUS  COPYRIGHT 2006 ACS on STN
TI   Molecular mechanism of action of ribotoxins

L6   ANSWER 2 OF 5  EMBASE  COPYRIGHT (c) 2006 Elsevier B.V. All rights
     reserved on STN
TI   Bacterial toxins: Potential weapons against HIV infection.

L6   ANSWER 3 OF 5  EMBASE  COPYRIGHT (c) 2006 Elsevier B.V. All rights
     reserved on STN
TI   Delivery into cells: Lessons learned from plant and bacterial toxins.

L6   ANSWER 4 OF 5  EMBASE  COPYRIGHT (c) 2006 Elsevier B.V. All rights
     reserved on STN
TI   Ribosome inactivating proteins and apoptosis.

L6   ANSWER 5 OF 5  EMBASE  COPYRIGHT (c) 2006 Elsevier B.V. All rights
     reserved on STN
TI   Cytotoxic ribosome-inactivating lectins from plants.


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